

**DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES**  
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TRANSCRIPT OF A FIVE-MEMBER COMMITTEE EXPERIMENT

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TRANSCRIPT OF A FIVE-MEMBER COMMITTEE  
EXPERIMENT<sup>1</sup>

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The following pages contain the transcript of a committee experiment of the type first introduced by Fiorina and Plott [1]. The subjects, law students in their second year of study were very articulate, sensitive to moral concerns, and skilled in strategic behavior. Their conversations, debates and reflections might provide a good source of data for scholars seeking to explain the equilibrium decision made by similar groups. The transcript may also provide some experience for those interested in field applications of laboratory results with the type of social environment within which mathematical models are known to work.

The conversations are as complete as could be obtained from the recording. Little or no editing has been done. Experimenter comments or observations always appear in brackets -- [like this].

The committee's problem was to pick a point in the positive quadrant of a two dimensional Euclidean space. The preference

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1. The financial support of the National Science Foundation is gratefully acknowledged. I wish to thank the research assistants Randy Calvert, James Hong and Darwin Niekerk for their help.

patterns, induced in accord with the theory of induced preference found at [3], and the operationalized at [1], [2] shown as Figure 1. The points 1, 2, 3, 4 and 5 respectively indicate the points of highest possible payment for the individuals indexed as 1, 2, 3, 4 and 5. The figure also indicates the colored areas referenced in the agenda. Payoff amounts are on Figure 2 and a detailed example of individual incentive chart is Appendix B. Individuals in this experimental setting are allowed to reveal nothing quantitative about their incentives (only ordinal information can be verbalized) and there can be no deals to "split" their profits afterward. (See [2]).

The group was to use majority rule and follow the agenda found in the instructions in Appendix A. The agenda is known to systematically influence the outcome [2]. This particular agenda was designed to get the group to choose the point (25, 72). Very early in the experiment these subjects chose to disregard the agenda and substituted, essentially, the procedures used in the Fiorina-Plott [1] experiments. With these substitute procedures committees in general tend to choose the equilibrium point (39, 68). This tends to occur when the committee members can openly engage in conversations such as they do here, and it also tends to occur when the committee members can say nothing other than what is necessary to make proposals and vote. Experiments subsequent to the one reviewed here have demonstrated that when this agenda is rigidly followed<sup>2</sup> the decision does not tend to be (39, 68) nor does it tend to be the point (25, 72), for which the agenda was designed. It tends to be either (30, 68) or (37, 70) depending upon whether the light area or the dark area was chosen at item number 1. See Figure 3.

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2. Discussions not "germaine" to the item under consideration are ruled out of order.

The final outcome of this experimental session was (39, 68). The group first ignored the agenda and then "agreed" on a point (39, 68). They then went through the agenda and the point (39, 68) survived. So we know four things about the conversations below. First, they have some similarity to the discussions and arguments in which we have all engaged while participating in committee deliberations. Secondly, something occurred which caused the participants to shift from the voting strategies they usually use which make the agenda models work, to the sophisticated strategies generally used here when they finally go through the agenda. Third, the conversations here are rich and diverse enough to support almost every conceivable theory about group decisions. Game theorists in particular might be able to see more clearly the motivation which lies behind theories which have their origins in behavioral studies of committee behavior as opposed to broad overriding principles of strategic behavior. Finally, and perhaps most importantly, we know that the conversations and arguments were not responsible for the choice of the point (39, 68). Given the procedures, implicit in the agreement to disregard the agenda, the point would have been chosen even if no conversations at all, other than proposals and voting, had taken place. The theories which receive support from these conversations cannot account for the results.

We turn now to the text of the experiment.

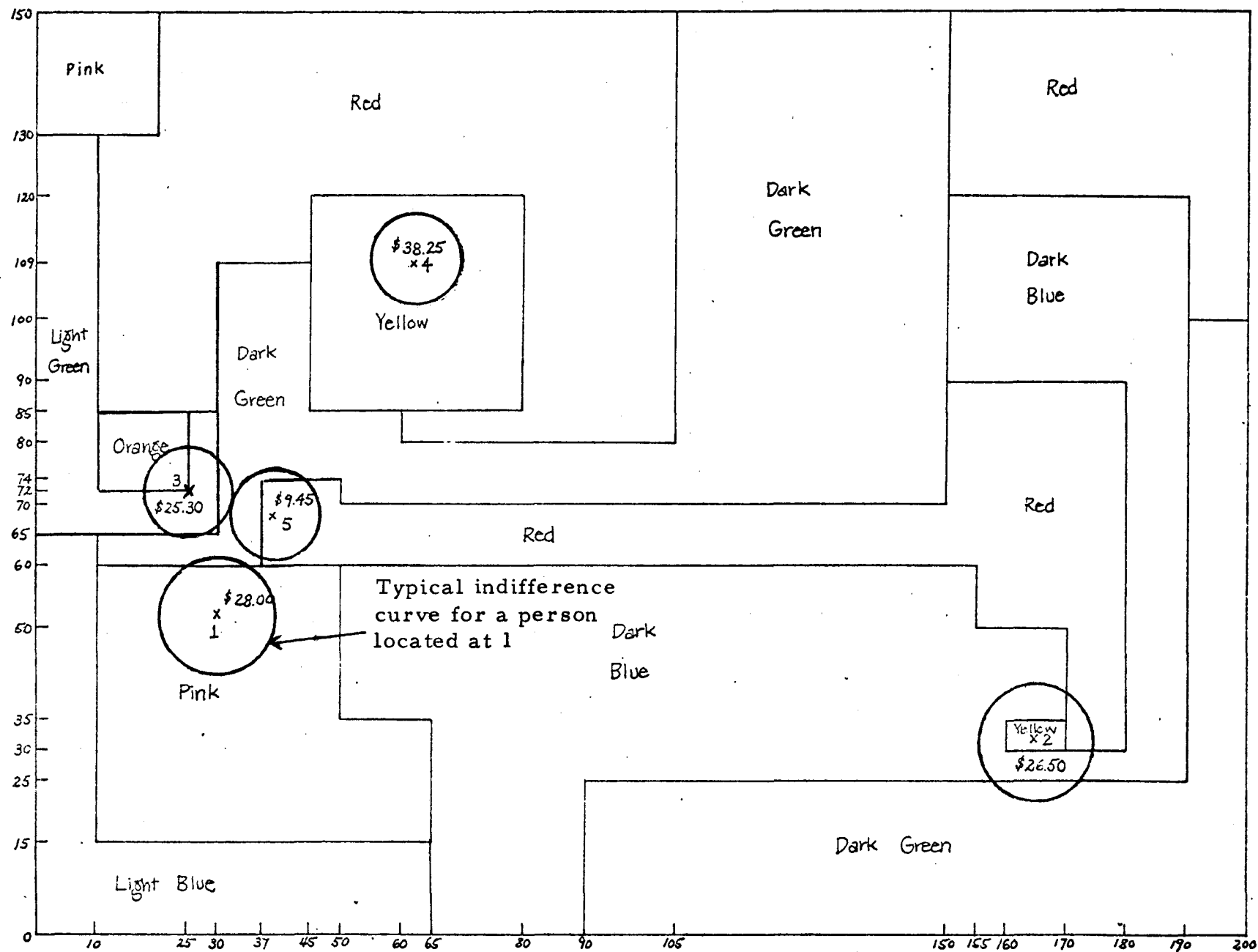
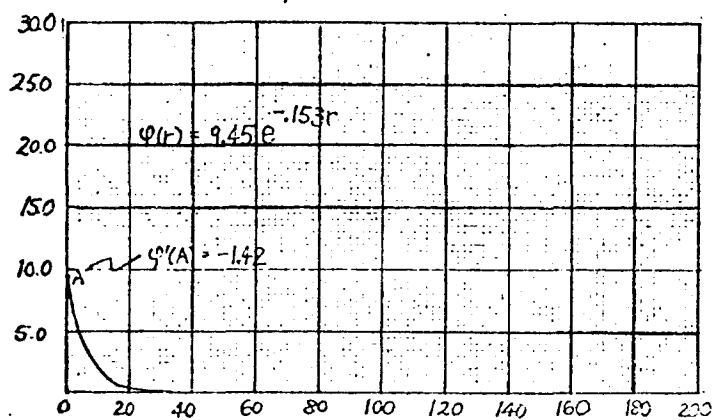
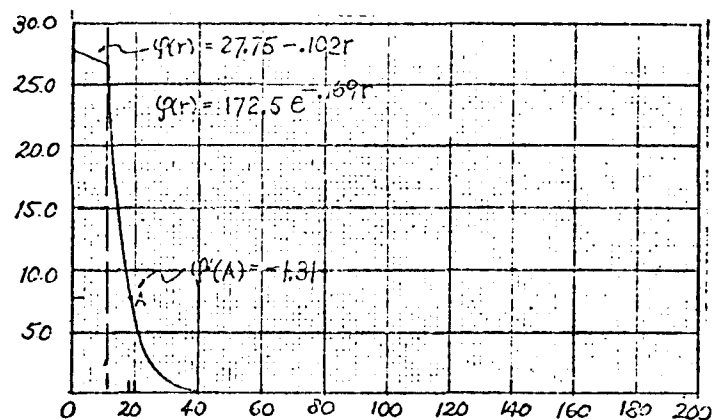


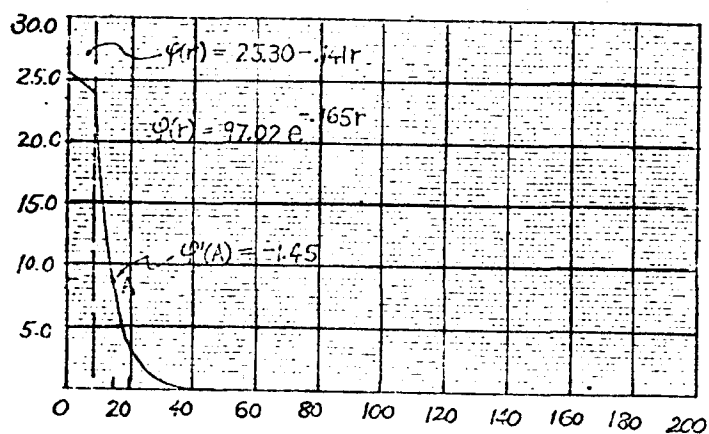
FIGURE 1. Issue space, individual maximum points and individual maximum amounts.



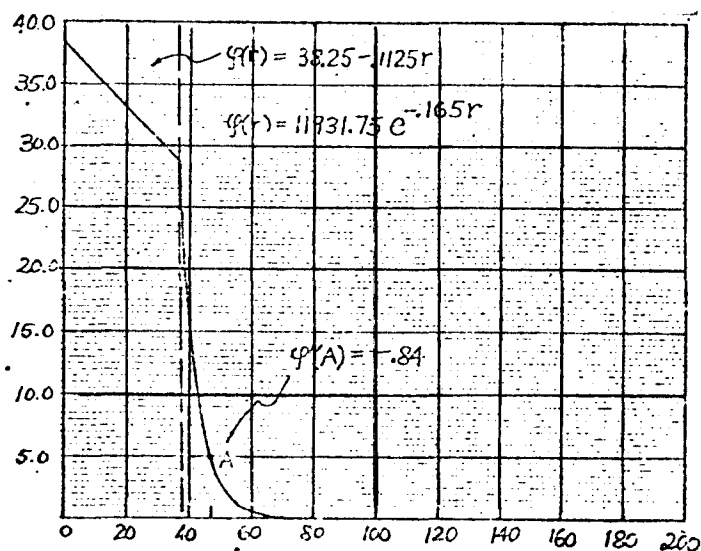
Position 1 max point (39, 68)



Position 2 max point (30, 52)



Position 3 max point (25, 72)

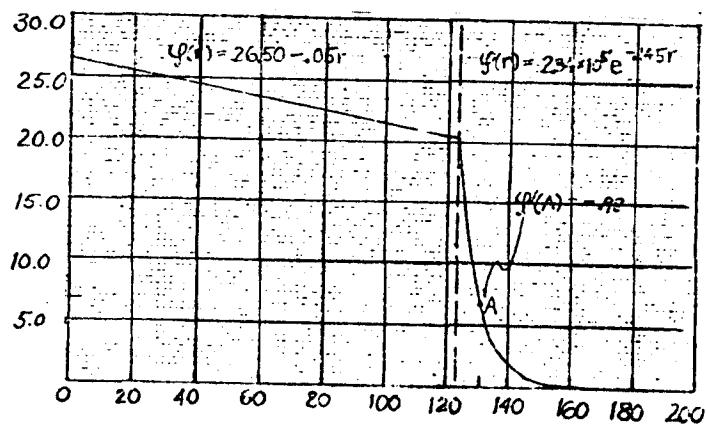


Position 4 max point (62, 109)

$(x^i, y^i)$  = individual  $i$ 's max point  
 $(x, y)$  = chosen point

$$r = [(x - x^i)^2 + (y - y^i)^2]^{1/2}$$

FIGURE 2: Payoff amounts  
 (in dollars): Amount shown as  
 a function of distance from point  
 of maximum payoff.



Position 5 max point (165, 32)

## TEXT

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## LAW SCHOOL CLASSROOM

11 September 1975, 2:05 p.m.

## EXPERIMENTERS:

P. (C. Plott)

C. (R. Calvert -- Graduate student research assistant)

N. (D. Niekerk -- Graduate student research assistant). Chair-  
man and without knowledge of predicted points.

INSTRUCTIONS: The instructions were read by C. Plott. He also answered all clarifying questions. Niekerk then read the relevant portions of the chairman's instructions.

N. All right, I am going to give each of you a number, you are No. 1, 2, 3, 4 and 5, and I would like you to put on top of your instruction book your name, social security number, (the reason we have to have that is because the people that gave us the money would like to know who we gave the money to) and the number that I just gave you. I also want you to put the x and y coordinates of your best point. Okay, is everybody ready?

1. Mike [ 30, 52]
2. Bob [ 165, 32]
3. Charlie [ 25, 72]
4. Jeanine [ 62, 109]
5. O'Malley [ 39, 68]

1. Just one moment.

- N. All right, so the first item on the agenda, under Item 1, dark versus light and the light colors are light blue, light green, yellow, orange and pink, and the dark colors are dark blue, dark green and dark red. Okay, the committee is open.
2. Well, I think that each of us would be fairly satisfied with the vast bulk of the area covered on the map. Most of it, I think, will please me and most of the people here, accordingly since most of the diagrams are dark colors that probably more of us would be better off if we at least started with dark, and it would be more likely to get a good result if we went with dark colors.

3. I don't think my map looks like yours in general, if I picked a dark color, it would have to be dark green or dark red and it would have to be within a fairly narrow range of x coordinates and y coordinates.
1. I'm in the same position too. Primarily to me a lighter color is better and most of my map is excluded...
3. Most of my map has very low numbers, only in a very limited area has high numbers.
1. While there are some high numbers in dark color regions, a lighter color would seem to give me the higher.
- N. If you want to debate or anything, you can just go ahead and debate by yourself, and when you would like to take a vote, then raise your hand and tell me.
5. I, I don't know whether .... I suppose, this is by design .... I would prefer having the decision in a darker color. They are structured in such a way to be considerably more preferable to the light colors. I see a rapid diminution in my interest as we get into the light region. Wow! You would really hammer me. (laughter).
4. I must be the tie-breaker because my optimum area is in the light area but the area immediately beyond that is reasonably okay and it is completely dark.
3. What colors are dark?
4. Dark green and dark red.
2. And dark blue.
3. Dark green is satisfactory to me. It is best for me.
2. Well, we don't have to decide that yet.
1. My optimal point is in the light area but there are some points in the dark area which are quite good.
5. Right, my optimal point is in the dark red and there are dark greens and dark blues, great proximity to that point also, but once we get in the lighter color we immediately drop way off from the optimal point. It, the value, rapidly diminishes.
1. I can get fairly high numbers in dark green and dark red but dark blue is out.
5. Oh!
4. Similar to mine.

5. My dark blue isn't that great either but I once again I don't have to worry about which color right now because it seems dark blue would be .... It does seem that everybody has at least arrived at the tentative decision of the darker colors, supplying us all with a broader range of alternatives.
1. Let's find out which dark colors we are talking about. We might get locked into a dark color and find out that each of us is talking about a different dark color. [ He seems to sense the principle which lies behind agenda manipulation. Under the strict interpretation of the agenda this suggestion would have been ruled out of order since it entails discussing items which appear later. We have had enough experience to know that this suggestion may cause the outcome to be different than predicted by the agenda model. Since we are still exploring the bounds of agenda ideas we had decided, prior to the experiment to allow such discussions.]
5. I was talking about dark green and dark red and I suppose there are a couple points, not so many in dark blue.
1. The points where dark green and dark red are good for me are limited to a very small point in my diagram and there are a lot of common points of dark red and dark green.
3. Even though we arrive at a color that would be at an optimum point satisfactory to all of us doesn't mean that we can possibly arrive at any coordinates within that color that would be satisfactory.
5. Let's start talking about coordinates.
3. We have to talk about coordinates it seems to me, can we talk about which coordinate we want?
- N. Yes. [ The agenda, in part, goes out at this point.]
3. Can we assume all of the coordinates are the same?
- N. Has everybody this x axis and y axis?
3. All of our colors can form ....
4. You say that the patchwork is the same?
5. Can you take notes on the board or we have to remember?
- N. I guess you can.
5. Can we write on our sheets?
- N. On the back pages of your instructions there are some but you can write on the chart.
1. Let's get everyone's optimum point.

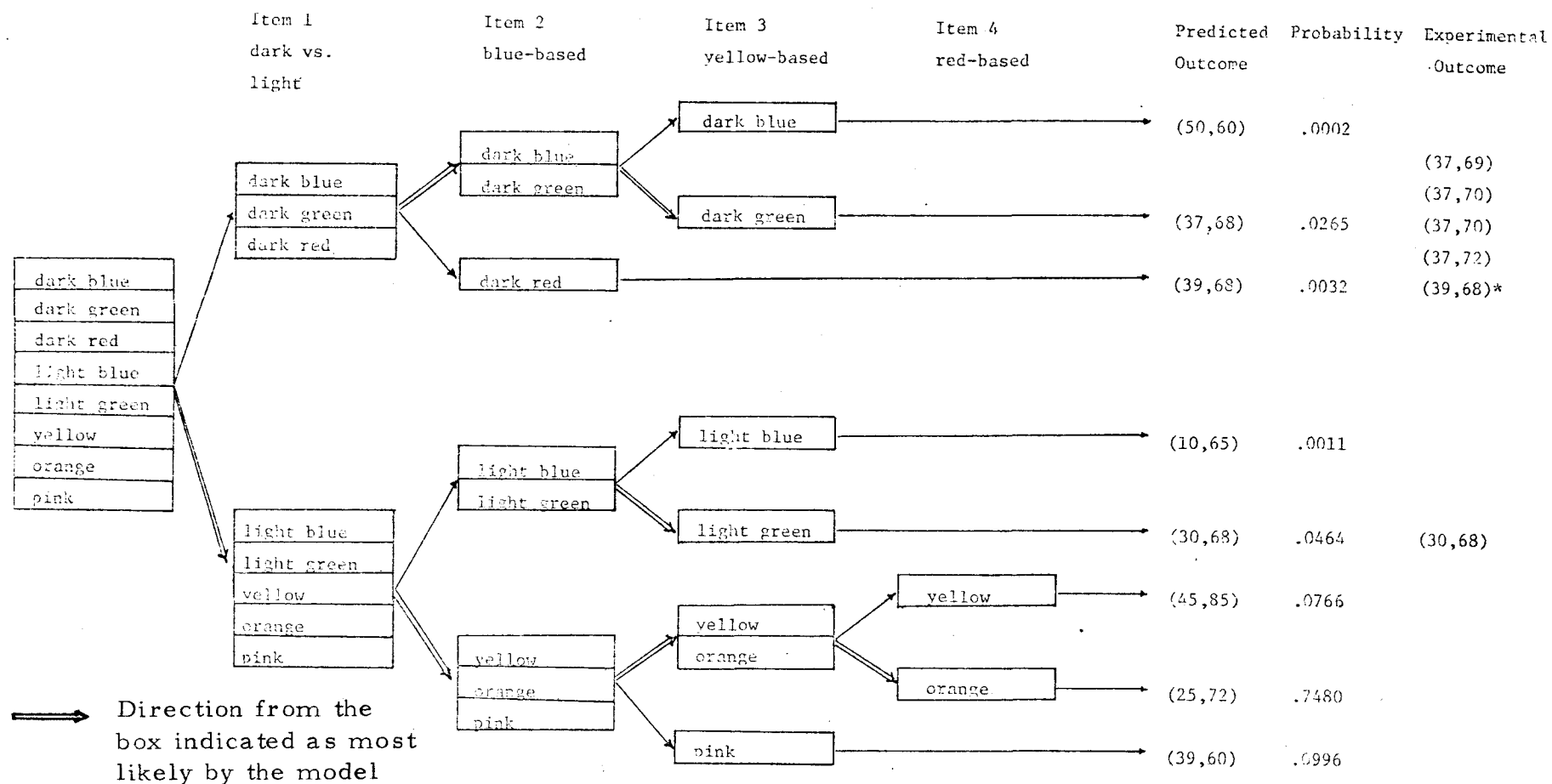


FIGURE 3. Probabilistic Prediction of the Plott-Levine Agenda Model And The Results Of Six Experimental Sessions

\* The transcript of this session is reported in this paper.



2. Yeah.
3. All right.
1. Mine's at 30 on the x axis and 52 y axis.
3. (30, 52)?
1. Yeah.
5. Is that (x, y)?
1. Yeah, 30 on the bottom, 52 up.
3. All right, what's yours?
2. Mine appears to be way different from everyone else's, mine is 165 on the x and 32 on the y which puts me in a light color, but, ah, I guess I, ah, would turn that down.
1. 165 what?
2. 32.
1. I can see why they said "no physical threats."
- ? . Is that your optimal point?
2. Yes, regrettably.  
(Laughter).
3. (165, 32). Yea, you are barely in the yellow. That is nice isn't it? My optimal point is (25, 72).
5. Can we talk about the colors, this is quarter light green and orange? How does that work?
1. Do we all have the same color patterns?
- N. Yes.
- ? . As long as we vote in the light color pattern we'll be set.... later on we take a vote on where we want to be on the axis.
4. My optimal point is (62, 109).
1. A hundred and what?
4. Nine.
3. It appears to me that what we want to do is to pick our point, and then we can go to the colors that we need. [A new agenda is prepared here.]
2. (62, 109)?
4. Right.

1. What about yours O'Malley?
5. Mine is (39, 68), 39 x axis, 68 on the y axis. Puts me in the dark red.
1. (39....68). [All "best points" have been correctly revealed now.]
2. Well, I realize that given my apparently inferior (laughter)... it is going to be difficult to convince you to adopt a 160, approximately, x coordinate, but I kind of hope that like ... to move ... picking a point even equal distant between the other points that each of you has, and move it if you can, you know, towards me just a little, I am not even expecting that it would be near a 100 mark. [This would almost assure him \$20.00.]
3. Ah, you know that moving that way might not be a great idea frankly because even if we move it, in order to move it far enough to make a difference ... you way down there ... can we talk about the value ranges down there ? [3 has the directly opposite preferences at equilibrium and would get \$0.01 at x = 100.]
- N. You can talk about coordinates but cannot talk about monetary amounts.
5. Oh, can't talk about monetary amounts.
3. Let's just put it this way, for me if I go beyond approximately 50 on the x coordinate, I get down to a negligible, utterly negligible amount. [3 - max \$1.50.]
1. I get very low starting at about 45 or 50... 45, I guess. [1 - max \$14.00]
4. Fellows, it seems like that ...
2. Wait a second, I don't understand you are talking about a horizontal move that number...
1. Yeah, if you went beyond 50.
2. On the x number, you mean?
1. Yeah.
3. 40 to 45, if I went beyond that, it wouldn't be worth my time. Near 55, I'm just about zip.
1. Near 55, you are?
4. Fellows, it seems like right around 45 or 50 x, between 80 to 85 y seems to be fairly equal distant between about four positions and should maximize the group effort. [Her \$30.00 - \$35.00 range.]
5. (Pause). I want to get the rules straight. We can't make any discussion about sharing?

N. That's correct.

1. Okay, I think at this point we know where each other are.
3. I think it would be a definite community interest, 1, 3 and 5 to be in dark green. [Coalition proposal.]
5. It can be either dark green or red -- well, you know, probably dark green but no matter what, perhaps it might be a good idea if voted on going to the dark versus light vote right now. [His max is in the dark.]
3. I don't know why, it seems to me that the only thing that counts is the point we pick. [His max is in the light.]
1. Yeah. Figure out the point we want and then just zoom right through the items. [His max is in the light.]
5. Oh, okay.
2. I really, again ... it's ... it's difficult situation but like you people have mentioned that 50 would be, you know, as far over towards desert that you could go (laughter) and if you could pick a point on the 50 line at least ... I won't get ... it will not be a great deal of fun but at least it will be something ... I think somebody mentioned a point on the 50 line, would that be ... seem ... [2 - \$20.50 - \$20.70.]
5. Something like maybe (50, 80) something like that. [5 - \$0.82.]
2. Yeah, (50, 80), (50, 70) whatever is in the ball-game here. [2 - \$14.00 - \$19.00.]
5. Well, let me ask this.
2. Well, that would be fairly close to points 1, 3, and 5.
3. No, no, to me it's very roughly tapered off at that point. [3 - \$1.50.]
1. Yeah, and very bad for me too. Can we get some names here? [\$2.00 -- Note the request for names -- it frequently occurs.]
3. Charlie.
2. You are (25, 72)?
3. Yeah.
5. Now let me get those numbers and names ... what is your name?
1. (30, 52).
5. Bob, where are you?
2. Way out, in the middle of the little yellow square way over to the right.
5. Charlie, where are you?

3. I am at (25, 72).
5. What is your name?
4. Jeanine.
5. Where are you, Jeanine?
4. I am at (62, 109).
2. But that's why, O'Malley, I said the point 70 because that's on the y axis, because that appears to be just as far from 1 and 3 on the y axis to point (50, 70) seems to be about equidistant from points 1 and 3. [2 - \$19.00.]
5. How is (50, 70) for you?
3. Oh, I am down there where it doesn't amount to much at all. [3 - \$1.50.]
1. I am down there too. [1 - \$2.00.]
4. Yeah, it's bad for me, 50 is all right but I ... at least until 80.
2. Mike, your number is what?
3. (30, 52).
2. Well...
3. If we get it any lower towards ...
2. Just look at the concentration of those ...
1. Yeah. 1, 3 and 5.
2. 1, 3 and 5 is the place to make money, those three.
1. If the distribution is anything similar -- it would seem to me the best point to be is around (35, 64) or (35, 63). [1 - \$16.00 - \$18.00.]
2. 35 what?
1. (35, 63).
2. Not for you, Jeanine, it wouldn't be. [2 - \$2.00 - \$3.30.]
4. No. [4 - \$1.70.]
2. What about a point other ... O'Malley, what about a point, ah, (58, 80)? [2 - \$20.55]
5. You don't have to talk to me so much, Bob ... it's Charlie and Mike you are talking to because you are moving further away from them than from me because my number is ...
2. No. Aren't you 40 something?
5. (39, 68).

2. Yeah, (39, 68) you know what I mean. [Suggesting a coalition?]
5. See you are still talking about something in my range, when you are talking to me, but for them ... [5 - \$0.27]
2. I am talking precisely to you.
5. I know, but you are talking out of their range.

3. I would suggest that the best thing to do here is not to look to the, ah, ah, overall societal, ah, maximization of, ah, income here and that, ah, with the utility of the money; if you have it, it seems best to go for the large numbers, rather than distribution.

5. How about (33, 65), Mike? That puts us right in the middle of that triangle between you, myself and Charlie. [5 - \$3.50]

1. (33, 65)?

5. Yeah, check that out.

1. (33, 65) that's okay. It would be better moving further down on the y axis. [1 - \$20.00]

5. How about (33, 64)? [5 - \$3.25]

1. (33, 64). [1 - \$22.00]

3. No, we just lost a lot of money over here. If you'd try (30, 65) that would be fine. [3 - \$16.00 at (33, 65); \$14.00 at (33, 64); \$20.00 at (30, 65).]

5. (30, 65) is okay for me. [5 - \$2.25]

1. You're really moving me out now. The Grand Design is becoming more apparent now. O'Malley!... [1 - \$19.00 at (30, 65).]

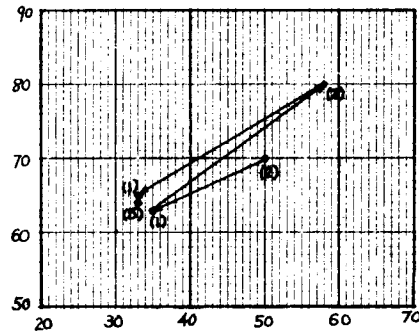
5. Let's see, ah...

3. Let's see we can't talk about percentages either, can we? [Note the attempt to get at the quantities.]

- P. No.

2. O'Malley, I think, between me, Jeanine and yourself, you know where she is.

5. Right, I know where she is.



Proposed points and proposing individuals in parenthesis.

2. What is the situation there, are you at all sympathetic to a point between the two of you?
5. Well, see, you know the point is, I can get a lot closer to those two guys with moving very little and in order to get out there to Jeanine I've got to get down there towards ... fairly small value to me and if she comes closer to me it is going to come progressively less valuable to her also. [He is thinking of "half-way" as being "cooperative".]

4. I don't know if all of these values are similar but it seems to me there is a large break in values at one point in the scale.

2. Right, it does drop off all of a sudden.

3. Mine drops considerably, can we talk about percentages? [This is another attempt to get comparisons.]

- N. No.

3. Mine drops off considerably.

1. O'Malley, from (33, 62) which way would you move, you to Charlie's? [1 - \$25.00. Note the change in the "status quo" from (30, 65) and/or (33, 64).]

3. I would move left there, that's a very sharp drop off in money for me. [3 - \$11.00; a one unit move left would give him \$13.39.]

1. Okay, very bad for you where?

3. This is difficult because we don't know how little money the other people are getting on these things, as far as I know the best presumption that we can make, is that we are all standing to make somewhere around the same amount at the center point, and that the drop off is somewhat similar.

2. That's just a crap shoot. [2 - \$2.25 at (33, 62).]

3. We're in the blind either way. We are in the blind on that.

1. I think if the three of us can get up to a point that maximizes what we can make, you know -- as a voting block the three ... [Coalition proposal?]

3. Maximization is simply has to be, ah, we have to do something like make a rating of one to ten on how much we want of a certain point and then assign different numbers to those points.

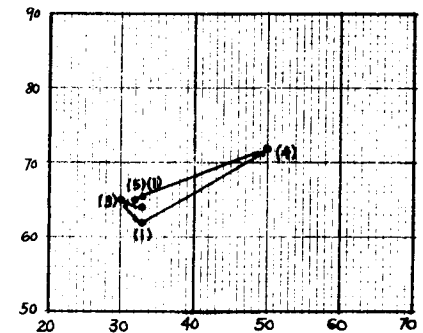
1. I think by picking points we can narrow it down.

4. It seems to me one thing we should observe is that the scales are similar, the increments when we get away from the center point, the advantage to be gained or lost is very small, at least on mine. [4 - \$1.50 at (33, 62).]

3. Immediately it doesn't go down fast, but then at about six lines out it begins to go down very fast.
5. No! Mine's different from that. Mine has a considerable premium on the center point and from there to the very next line decreases tremendously as a proportion. It drops off quite rapidly. [Notice that he completely understands his incentives. Later he asks to have this explained at what seems to be an "appropriate" time. The use of "proportion" here is also illegal.]
1. Is that right? Mine holds steady for about five lines from my center. [Correct.]
3. That holds true for me for about three. [The correct number is three.]
5. I could say that I'll be happy with, you know, well anyway, it drops off quite a bit.
3. Let me ask this, if we can't discuss the sums, can we assign, can we develop, say one to ten rating where we would rate different places and use those?
- N. No. [This involves quantitative information -- ratios.]
2. What's your drop off, how far away can you go?
4. I need to go out at least 50, and up at least 72. [4 - \$19.00 at (50, 72); \$34.00 at (50, 75).]
2. That's as far as you can go?
1. O'Malley, I'm trying to find out what your grid pattern looks like so that we can get to a point somewhere in this triangle. How fast does yours drop off from your point? [His tone presumes that the three of them have agreed to his coalition suggestion above.]
5. From my ... from my ... well look, I think what we've got to do Mike is we each know what our center point is for the three of us. That is what we've got to go for. [Somehow 5 has slipped into an agreement here which he later regrets.]
3. That's what we've got to go for.
5. We've got to play around inside that triangle.
2. Wait a second.
5. What we should do, I think, is we know which direction to draw a triangle between the points, we have already done that, okay, and by drawing a line which bisects angle ...
3. That won't necessarily do it.
5. No, that will give us the center point, that's a starting point, center

point of the triangle, okay, and we know that the numbers are going to decrease in the least amount of time heading directly away from each of our points. That's the direction in which the numbers will decrease least rapidly, simply because you will be running perpendicular to the lines, okay? Rather than going off on a tangent across them. [5 - \$2.50 at (31, 64), the center.]

2. Pardon me, say this again.
5. We want to get towards the center of the triangle.
1. Yeah. [1 - \$22.79 at (31, 64).]
2. Have you ever thought that might actually not be the most profitable for you people because apparently there is a very different drop off pattern and the fact that, granted, you three are closest, it may be that the way this is set up, that it will not be optimal for one or more of you to go with the middle part of the three.
3. Yeah, furthermore, it might be that you have a tremendous sum of money down there in the corner and we've got just trivial sums of money relative to what you've got.
2. This is no tremendous sum that we have.
5. Taking a piece of paper and putting our three points, we can draw a triangle on separate piece of paper. By drawing lines bisect the angles formed by the three sides of that triangle, we'll come up to our center point, then we don't have to pick a point to know in which direction our value will be going up or down.
5. How far is your center point approximately?
1. I have, ah, (32, 65) center point. [This is a slight error but they use it. The error is not in 1's favor.]
3. What is your point, O'Malley?
5. (39, 68).
1. Okay, let's just pick (32, 65) and discuss which way we'd like to move from there. [1 - \$19.00]
5. Okay.
3. Now, I can go either up ...
5. (32, 65)? I say 65 or 66 maybe. [5 - \$2.80 at (32, 65) and \$3.25 at (32, 66).]



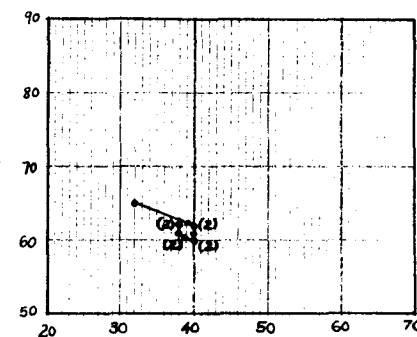
Continuation of proposed points and proposing individuals in parenthesis.

3. I can go up one or to the left one and make quite a good jump, just one number or two numbers. Two numbers, two little boxes to the left or two boxes up I can make fairly good percentage increase. [\$18.64 with \$3.00 additional per unit to the left.]
5. Okay, I can go, can I say how many points?
- N. Yeah.
5. Can I say how many points I can go without making a change in value?
3. How many monetary points?
5. No, not how many dollars, how many grid points I can go up without a change in value?
3. Sure, sure.
- P. That means, there is absolutely no change at all? Okay.
5. I can go up from the point (32, 66) okay, ... on that point. I can go 1, 2, 3, 4, 5. I can go up to 71. [Correct]
1. That's 71.
5. I can go up to (32, 70) without a monetary change. [No gain over (32, 66).]
3. I can go better than that.
1. Okay, I get way back.
2. You, I'll bet you do, you see because that's running right along ...
3. See, if you guys draw the line alike I said you can see the direction that it will be diminishing as you move down, that is bisecting the angles, and that point up is almost parallel to the direction in which it diminishes most rapidly for mine.
3. O'Malley, what happens to you if we go two boxes to the left?
5. I drop off quite a bit. [\$0.75]
3. You drop off a lot?
5. Yeah, I can go ...
1. From our center point (32, 65), if I go down one, how does it help you or hurt you?
3. Ah, we're losing fairly fast there. [\$18.64 to \$16.00]
1. Just one.
3. Down from where?
1. From the center point.

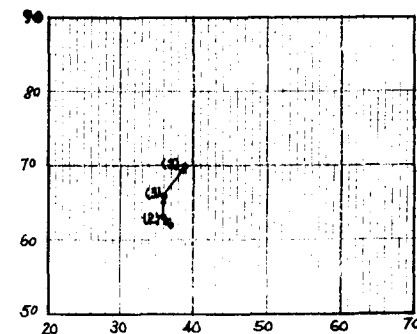
3. Down one and to the left one would be staying the same. [Correct]
5. Well, if you're going to the left one, then I'm out. [\$3.25 to \$2.60]
3. You are out, okay.
5. But, ah, down one doesn't hurt me at all.
1. Down one doesn't hurt me, it helps me.
5. And down one and half doesn't hurt me actually. [This is about like moving to the left one unit which he objected to above. It seems he is partial to 1 as revealed here and later.]
3. Well, we're dropping off fast over here.
5. Okay, how about down one, that gives Mike a little help, he is the furthest one out. It doesn't hurt you and it doesn't hurt me.
3. So what y coordinate are we talking about?
5. That would be (32, 65). [\$3.25]
3. (32, 65)-- yea, that's not a bad point. [\$18.64]
5. How about you, Mike?
1. Pretty good. [\$19.00]
5. Okay, that's it. [It seems over at this point which is the point predicted by "resource" coalition theories. But, 2 speaks up immediately.]
2. How is (40, 62) for O'Malley and Charles? Who is something like (30, 52)?
1. That's me. (40, 62)?
2. Yeah. Alright, for you and O'Malley?
1. I couldn't do that, I'm getting down to negligible sums on that one. [1 - \$15.00.]
2. Right.
1. I've fallen off from the other one.
2. How's (40, 60) then? [2 - \$7.88]
1. (40, 60)?
2. Yeah.
1. Ah, that's ... I'm indifferent between the two points. [1 - \$19.50 at (40, 60); \$19.00 at (32, 65).]
5. (40, 60)?
2. Yeah.

3. I'm getting out of the ... out of the running here. [3 - \$4.25.]
5. It's the same. [Correct -- Notice here we have an interesting balance similar to the bargaining set and/or competitive solution, between (32, 65) and (40, 60) with (1, 5, 3) with the former and (1, 5, 2) with the latter and 1 and 5 indifferent.]
2. It's the same. I'm just trying to find a roughly same point now for you two, so that the point that you've just been discussing and the point I just named is roughly the same as far as you two are concerned.
3. For compensation, is that correct?
2. I will ..., I could see supporting a point that is, oh, what would it be here, say, (38, 61) something like that. [2 - \$5.75 which is less than his amount at (40, 60) but it is better for both of his "partners".]
1. That's a little better for me. [\$22.79]
2. That's closer to you as well, O'Malley, so that it should be ...
5. I would, I would ...
1. That's really hurting you, Charlie, I think. [3 - \$6.00 is clear that 3 would be affected. Why does 1 ask? It would seem to be a poor strategy.]
5. I would guess Bob, given your center point, that the amount you have to gain ...
2. I think my numbers may be misnumbered here, am I supposed to have the same value all way around the circle?
- P. (Plott walks over to check his chart).
3. Bob, I would guess that given your position down there, the amount that you gain by that move is quite different from the amount I lose.
2. I doubt it, you see, they have set this up to consider that possibility and the point you people suggested gives me nothing, absolutely nothing. But, a small gradation inward means that I can get something out of it, something more than zero, now granted you will go down, but I doubt that given the distance you are away that it will be zero. [2 - \$2.25 at (32, 65).]
1. Oh, it goes down. It goes down so much. [1 - From \$18.64 to about \$5.50.]
5. What number is it that you are proposing?
2. I'm proposing (38, 61) I believe I said, something roughly that.
5. Well, you know you have to get above 61 for me, otherwise it's, ah...

2. 62 ... then (38, 62).
1. Now, now I'm indifferent between ...
5. Yeah, (38, 62) I'm indifferent too. I mean I make out the same as the point which we have selected before between Charlie and I, Mike and myself and that number was (32, 65)? Is that correct? [Actually (38, 62) gives him \$0.75 more.]
3. Yes.
5. Or (32, 66)? [This would make up the \$0.75.]
1. No, (32, 65) was the point.
5. (32, 65) was the number that we had chosen before between the three of us, isn't that correct Charlie?
3. (32, 65), yea.
2. Well, (36, 63)?
5. What?
2. (36, 63).
5. I'm still indifferent. [True]
3. Well, now wait a minute. What if you go up on that, Bob, to (36, 66)? If that goes up to around 70? That kills some people, huh? [3 - \$15.00]
4. What happens to ...?
1. Yeah, I know. No, I'm out of the running on that. That knocks me out of the ball-game. [1 - \$13.15 at (36, 66) and \$7.00 at (36, 70).]
2. Well, what about say, (39, 70), is that appealing to you at all Charles?
5. Wow! It's pretty appealing to me. Wow! It's in my center point (39, 68). (Laughs).
3. It's not appealing at all to me. [3 - \$9.64.]
1. (39, 70). You know, it's not real bad but I got a big hunch that we're losing money, Bob.



Continuation of proposed points and proposing individuals in parenthesis.



Continuation of proposed points and individuals making proposals in parenthesis.

2. Well, of course, but...
1. No, I mean as an aggregate we are losing money up there.
2. I have no way of knowing. I just don't know what your map looks like.
1. You see, we are talking about two different ways to maximize our profits here, in other words you can find probably two of us who can find one or two different points to which we are indifferent which will increase or decrease the third person's profit but since we have not changed, we are somewhat indifferent, so at that point, perhaps we should step down to our second way of maximizing and ask how much the third person is going to gain, in other words, we are losing more all the way around.
2. Except... how can you do that? You can't.
3. He smiles, look at that! That smile. [Reference is to 5 who is evidently still pleased by the (39, 70) suggestion.]
2. Well, what about Jeanine?
4. My problem is the y axis problem. As long as you stay around 60, it doesn't make any difference. It is terrible. [Around \$1.50 within the 35 - 40 x range.]
2. Well, what about like at 70? Is there a threshold where it becomes at all meaningful?
4. Yeah, 70 as long as x is somewhere between 35 and 40 becomes better. [\$3.00 to \$6.00]
2. Oh, and then anything above 40 is good? [He sees their harmony of interest.]
5. Charlie, you and I are the two closest together, aren't we?
3. You are, you are over at ...
5. I am at (39, 68) and you are at (32, ...).
1. Well, that whole line of 70 between those ...
2. Jeanine, what does his maximum point look like to you? [Is this proto coalitional behavior?]
4. Let's see, he's...
2. He's like (39, 70 ... 68), is that meaningful to you at all?
4. Oh, yeah, a little bit, but not much -- not anything to write home about. [4 - \$5.00.]

2. What if Mike moved it to like (39, 70)?
4. Yeah, well.
2. I am sorry, (40, 70), would that ...?
4. Yeah, that's better, my problem is really a y axis problem, I increase a lot with the y increments.
2. Ah, what about say move that a little further to like (43, 71) or something like that, say moving a little closer?
3. Very fast drop off from this point of view. [3 - \$4.98.]
1. Yeah, I'm out. [1 - \$3.50.]
3. Goes from the difference of big profit to none, almost. Tremendous difference.
4. Mine's a little better but not appreciably.
2. Okay, ah ...
3. Let me ask you something. Do you have fast drop off or a slow drop off from your maximum?
4. I have a very slow drop off. [\$0.11/unit]
3. Very slow drop off. So even after that point you have some that are okay?
4. Even out to, ah, between 70 and 80 range on the y axis and up to 35 or 45 on the x axis I'm still okay, but not ... [Defines an "above \$5.00" range.]
1. Okay, that, that takes me out of the ball game, well, not totally but ... [About \$7.50 maximum.]
2. I don't know, I'm kind of prepared to go, I know what Jeanine apparently with ... she ... you can live within above 35 and above on the y axis, what amount would you say on the y axis you'd want to be above?
4. Well, I could take above 65.
2. Above 65.
4. Below 65 would ...
2. Yeah.
1. Are you talking about 35, Bob?
2. Yeah, so that I would be willing to go with, like O'Malley's maximum point.

3. Let me say this: (35, 70). [3 - \$18.64. Is he trying to break up the conversation?]
2. I would go with your maximum point.
5. (Laughs). Wow! Heavy stuff going on here.
2. And that would, because Jeanine will, I think, would be willing to go along with that because that way she will get something, and I will go along because I will get something, nothing close to the maximum by any means.
3. Let me ask Mike ... [Is he still trying to change the subject?]
1. O'Malley! Let me ask you this. Do you want to maximize your own return or maximize the aggregate amount? [He decided to force the issue directly.]
5. (Laughs).
2. (Continuing). But something and they [referencing the other two players 1 and 3] too will get something.
3. Now let me ask Mike this (35, 70). [He continues to interrupt.]
2. Aggregate value is a meaningless statistic since we can't split it unless O'Malley is going to take us out to dinner. [Is this an attempt to get a bribe?]
3. How do you feel about (35, 70)?
1. 35 what?
3. (35, 70). How do you feel there?
1. (35, 70). Poorly, very poorly. [1 - \$6.50.]

[The following conversations continue in parallel.]

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>2. Ah, ... how far out do you go O'Malley, and still be part of this? Apparently you have a very fast drop off. What is the point where you drop off?</li> <li>5. My proportion?</li> <li>2. Yeah, is it like one line, two lines. Is that what you are facing?</li> <li>5. Well, can I tell ...? Can I tell proportions of how much it drops? (question directed to experimenter).</li> </ol> | <ol style="list-style-type: none"> <li>3. Okay now, (35, 70) is not a bad place for me. The center point that we picked is exactly the same for me. [Correct] So the question here is whether Jeanine and Bob gain more than you are losing there. (addressed to No. 1).</li> <li>2. That's super false (in answer to No. 3's comment).</li> <li>1. Moving away from our triangle center point in the direction of Jeanine is very bad for me.</li> </ol> |
|---|---|

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>2. Don't tell me proportions. Just say, you know, where the really big drop is like, one line, two lines...</li> <li>5. Yeah, about two lines.</li> <li>2. Two lines? Then how about like...</li> <li>5. You mean, at the center space I can go two increments.</li> <li>2. Then, how about giving you the max there within like one coordinate?</li> <li>5. Pardon me. Where would that be?</li> <li>2. Well, like as I remember your coordinates roughly (42, 68) or something like that. [Notice the x axis "error." which is in 2's interest.]</li> <li>5. My coordinate is (39, 68).</li> <li>2. (39, 68). So it would be like (41, 68)? Would that be ... ah?</li> <li>5. Yeah, I guess ... Oh, I see ... wait a second, I have a question on how this is numbered (to experimenter). [This is possibly a rhetorical question since he exhibited a full understanding above and on the test.] (Experimenter checks his chart).</li> <li>2. So it makes a big difference being on that one point or is it just you have a couple of lines and then it makes a big difference.</li> <li>5. Well, it makes a difference being on that point.</li> <li>1. O'Malley, if you move away from the center point of the triangle along the line, couldn't the center point of the triangle and your base point ...</li> <li>2. You seem to be moving across this very screwy territory where I am dropping off quickly and Charlie is dropping off too. If you move off line ...</li> <li>3. (Interrupting). I'm dropping off quickly.</li> <li>5. See, he's asking me essentially to move out parallel with the line which is drawn, which bisects the angle formed by the lines formed by your two points or mine.</li> <li>3. Where does he want to move? He is interested in what (38, 70) or something? [Notice the errors on both axes are in his own interest.]</li> </ol> | <ol style="list-style-type: none"> <li>3. I think it's bad for all of us if we stick with him.</li> <li>1. I think we ought to stick in the triangle.</li> <li>3. (To No. 1). At our center point how are you, at the center point we picked?</li> <li>1. Fairly good. It's fairly good for me.</li> <li>3. O'Malley, at the center point of our triangle (trying to interrupt 2 and 5).</li> </ol> |
|--|---|



- 5. Yeah, he wants me to move, oh, he is at 41. He wants me to move to my right essentially.
- 2. Toward Jeanine and myself.
- 1. Yeah, he wants to move away from the line, that line between the center of the triangle and your vertex.
- 5. Now what I want to ask is how much of it, is that a significant difference to move that slight difference or is it a big difference?
- 1. But it's a big difference to me and a big difference to Charlie.
- 5. I know, you guys are making me feel bad.
- 1. We're trying (laughter).
- 3. I think we should remain dedicated to the proposition that we want to aggregate the whole income.
- 2. But we cannot aggregate!
- 3. We want to get the largest aggregate.
- 5. What's being demonstrated in this experiment is that there is one swing person, i.e., me and ...
- 1. Right, and you can ...
- 5. I can strike a bargain with those two or those two.
- 1. Right, and in the bargain you get more money and they get a little bit, apparently ...
- 5. Right.
- 1. Or you can go with us, the three of us, get a fairly large amount each.
- 5. Or there is a third alternative. I could sit tight on my spot and you two guys could come over because you know ...
- 1. Right, you could keep your spot if you want to, you can bargain with those two to get your spot over our bargain.
- 5. Or I could bargain with you two to keep my spot ... if you see what I am saying.
- 1. I'm just about indifferent between your spot and the spot he wants.
- 5. Yeah.
- 1. It comes down to what you want to do, do you want to maximize the money yourself, you want to maximize what goes to the three of us.
- 5. I've got a question to ask. The figure we come up with on this

chart is that going to be the amount that we get paid? [More rhetoric.]

- P. You get paid.
- 5. I get paid.
- P. You get paid.
- 1. Everybody else gets paid according to their own graph.
- 5. Swell! Wow! That's higher than I usually get paid. Boy! You don't know what they are paying law clerks this summer. Wow!
- 3. Well, I would like to make a motion that we go back to what we consider was our optimal point before, which was (32, 65) and go with that.
- 2. I'll go with your point. You will get all you can. Your point.
- 5. Wow! Heavy stuff going on here.
- 1. It's just up to O'Malley to decide. [Note the agenda moves below will determine whether O'Malley must "decide" or let the "votes" decide.]
- 2. I move that we adopt the dark colors which is I understand, your point is in the dark red, right?
- 3. Now wait, we don't have to start with that, we can start with the points. We can start with the point and then do that.
- 1. Let's get the whole thing wrapped up and decide on the point and then the three people who are going to go with that point just vote them all the way through and if you screwed, it's going to come down to that anyway.
- 3. And the proper point to pick depends a awful lot on how fast yours is dropping off and how fast she is picking up from them and from what I understand from her, she would not be terribly much more hurt at our central point than at the slightly more beneficial point that Bob was suggesting. The drop off for Mike and I is very great out there, for O'Malley the pick up should be some, ah ... somewhat but not nearly what we are dropping off.
- 2. Yeah, for me the drop off where you people are going is very, very great. I get nothing out there at all!
- 1. Yeah, you see that was what happened no matter what point we pick.
- 2. Okay, right, but he was saying that was not the case.
- 3. No, I was saying, it depends on how much, not just the percentage drop off but the amount of the drop off.

2. Yeah, I realize that, but at that point, mine is nothing, I don't know about Jeanine but my drop off is big.

[ End of side one]

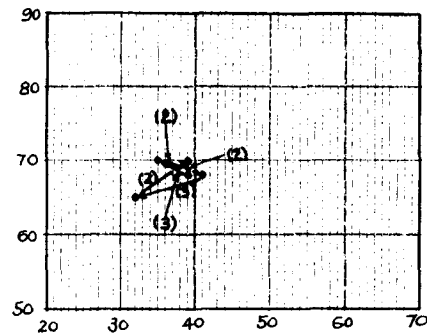
[ Very little conversation was lost here]

#### Relative Payoffs

(32, 65)      (39, 68)

1. \$19.00	\$7.50
2. \$ 2.20	\$5.25
3. \$18.64	\$8.75
4. \$ 1.90	\$5.25
5. \$ 3.00	\$9.45

#### True Payoffs Between the Points



Continuation of proposed points and proposing individuals in parenthesis.

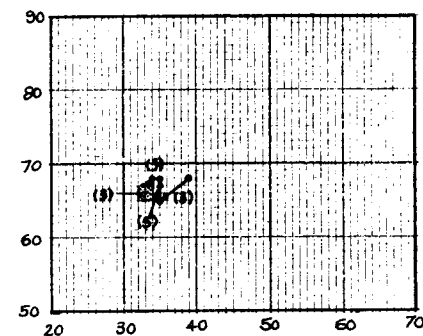
2. .... The point on O'Malley's, or very close to O'Malley's is what we ought to go with, and I am willing to go with that, and I think Jeanine ...
5. I need to make one point and that point is that the longer we stay here the less we get paid. [The current proposal is his maximum.]
2. That's right.
3. So O'Malley's really got to confront the question of ...
1. Whether he wants to screw out a brother classmate!
5. Well, how fast do your numbers drop off?
3. They drop ... moving from our center point toward your center point, moving from the center of the triangle toward your vertices they drop off very quickly.
5. I am talking about moving from, okay, I see what you're saying, okay, fine.
3. Moving along that line they drop off very quickly.
5. Right, because ..., yeah, okay. How about moving, have you drawn a line from each one of the angles formed by the triangle which intersects the center ideal point?
3. No, I'm just ...
5. Draw those, and then once you got the line coming from the angle

which is formed at my vertices, how fast you guys drop off once you go that direction?

1. Which direction?
3. Well, for instance take the point approximately (35, 65). [A concession from (32, 65) of almost \$5.00 to him.]
5. That's the worst for me.
1. (35, 65), that's over from where we were ...
5. That's quite a bit worse for me.
2. That's worse for me.
1. That's the question, how much you want to give up O'Malley?
5. Really! What a rude dude!
1. Okay, well, I think we've isolated the options. I am going to have to proceed on the assumption that the numbers are the same on each one of these things although maybe they are not.
2. They are not.
1. We don't know that.
2. Well, I'm saying they're not! If you people, unless you have a very different sense of compensation and you people are saying that you go five spaces, you've got nothing then obviously, if I'm even in this...
3. He's assuming the center points are approximately the same.
5. Oh, gee, you know by the time I get out there at the center point I've got, I've lost my, far and away, the major proportion of my compensation. [Recall earlier he was ready to accept it.]
1. What center point?
5. Center point of our triangle.
1. The triangle?
5. Yeah. Now, is that true with you guys?
- P. He can't answer, you shouldn't say percentages. [Notice the subtle way in which quantitative information can be conveyed at a critical time.]
2. Oh, because he said more than 50% or something?
5. I'm sorry.
3. What ... Mike, you can't go ... does it help you a lot to go up a little bit, or not?

1. Ah ...
  3. You have a very rapid ...
  1. It helps me more to go to the right which is obviously bad, worse for you.
  3. Yeah, it's fairly fast there, fairly fast going two to three to the right, it moves fairly fast. But you lose fast if you go a couple up?
  1. If I go one up, I lose not too much, I guess I can go one up.
  5. How about to the right?
  1. From the center point of the triangle I can go right three. Can I do this? (to experimenter).
- P. That's okay.
3. I can go towards the right without losing a lot. [ This contradicts previous claims.]
  1. Okay.
  4. If you go to the right and up then that increases me too.
  1. O'Malley, I'm indifferent between going one up and three to the right, relatively. [ True]
  3. Well, three to the right is fine, but if we do that it would also be good to go up two.
  5. How about (35, 68)?
  1. That's taking me out of it. [1 - about \$9.75.]
  3. I thought you said if we went up ...
  1. No, I said we can ... 35 what?
  5. (35, 68).
  1. (35, 68) I'm indifferent, no, wait a minute, (35, 68), yeah, that's taking me out of it.
  3. How about (34, 68)? How are you there?
  1. 34?
  3. (34, 68).
  1. It's the y axis that ... there is a big drop off between (34, 68) and say (34, 64). Moving along the y axis is hurting me a lot. Moving along the x axis isn't hurting much at all.
  4. Well, we must have the same problem, because I have the reverse problem.

1. So see, by moving above 65 on the y axis I start getting hurt at, you know, fairly good chunks.
3. Well, I've got a little triangle here drawn with the points (32, 65) at one point (32, 67) as one point and (34, 65) at one point and (34, 68) at one point sounds like somewhere around in that area we are doing best.
5. See, I am not convinced that Charlie ... it sounds to me that everybody here may have a much slower gradation drop off than I do. [False.]
3. Yeah, could be.
5. Well, how is that ... is your drop off real great, Bob, if we go up to about 68? That helps you I think.
2. 68 yes, really great, great drop off. [ About \$.50/unit]
3. And you've got to come all the way down to 64 to do well?
1. What about 65 O'Malley?
5. 56, what?
1. Ah, the center point of the triangle.
5. I know, 65 ...
1. No, wait, wait (32, 65).
5. Well, that's just what we were talking before, by the time we get out there, I don't really care for it anymore (laughs).
1. Okay, you'd like to move to the right, and Charlie wants to move up.
5. Wow! I'll say!
3. How much would you like to move to the right?
1. (32, 65)?
3. A move to the right doesn't hurt you too bad, right, Mike?
1. A move to the right doesn't hurt me. I could move up ...
3. It hurts me quite a bit but it seems O'Malley thinks it is very important to him.
1. By moving ... if I go out to 35 on the x axis and move up one,



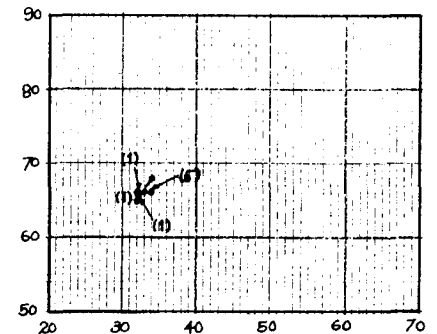
Continuation of proposed points and proposing individuals in parenthesis.

there is a fairly healthy chunk coming out of there. [About \$2.50 decrease.]

3. Okay, how about ...
1. The way, I mean, the way my concentric circles are drawn.
3. Let's see, I just don't know how fast you go up, O'Malley. It's almost impossible, there is a circle around that point, and somewhere around in there, you know, we can't know very well what optimizes.
1. What about (32, 66)?
5. Fine with me.
1. That's a little worse for me, but not too bad.
3. That's doing you a little bit better, huh, O'Malley?
5. As I've already said before, I really think, you know, the more we talk, the more I'm convinced perhaps what you guys should do, is give more towards my vertice, because I really don't think your gradation drop offs are as severe as mine, and ...
3. You don't know the absolute amounts either.
5. I know, we don't, but ...
1. O'Malley, you'd like to see as opposed to (32, 66), you'd like to see (33, 66).
5. I'm indifferent between those two points. [There is a \$0.75 difference which previously he would have called "large."]
1. Are you? What about you Charlie?
3. Let's see (33, 66). How about 30 ...
1. O'Malley wants to go up around 35 or more.
5. Well, yeah, I'd love to, but I don't want to take everything away from you guys.
1. I can go up to (35, 65) and not lose too much. [1 - \$16.25.]
2. (33, 66) is bad for me.
1. But I think Charlie is getting killed.
3. 30 ... what?
1. ... 5, 65.
3. Well, I don't get killed, but ... [3 - \$13.39.]
5. Well, we're going up toward you!

1. No, we're going away from him, 35 on the x axis, 65 in the ...
3. I don't get killed, but ...
1. That's why I think the answer lies somewhere around (33, 66).
5. I've really dropped off there. [5 - \$3.78.]
1. Okay, where would you move from there? I mean really small points. [Notice the change in the "status quo" and the following maneuver by 1 serves to distract 5 from his max.]

5. From where?
1. (33, 66).
5. (33, 66), I'd move to ...
1. Small jumps!
5. (34, 66) and I pick up some.
1. Okay, I've lost a little bit, how about you Charlie?
3. I've lost a little bit, but I can easily take it.
- (Laughter).
5. Okay, let's call it (34, 66). [5 seems to have fallen for the "trap" but then ...]



Continuation of proposed points and proposing individuals in parenthesis.

1. Okay, I move that we take (34, 66).
5. Wait a minute, let me check on that, make sure ... Wow! would that be a bad deal! [...he "recomputes."]
1. Let's everybody check your coordinates, make sure we are talking about the same points.
5. 66 ... 35 ... (34, 66). 34 ... Okay, I'll vote for that. How's that work out for you, Bob? [Rhetorical question? He wants 2 to object?]
2. Terrible, zero plus zero is zero. [About \$2.90] I mean, it's in a game like this where apparently it depends upon whether you choose profit maximize or not, it doesn't make any difference how much we are taking out of them because we can't.
3. Oh, no, it matters a great deal, at center point of the triangle, I am taking a beating, I am taking a real beating and I knew well ...
2. From his center point to yours, I am taking a beating and she is taking a beating.

1. I'm not talking about the center points of our optimal point, the center point of the triangle that we worked out.
2. To move from his center point to the point you suggest she and I take the beating.
1. I think O'Malley already understands that it's either maximize his gain or ...
2. No.
1. Or maximize the gain of the three of us.
2. He doesn't know that, he doesn't know what our drop off between your triangle point and his maximum point at all.
1. And he can't.
2. All we can say is that the difference ...
1. So there's no point in talking about it.
2. All we can say is that for us two, for him to move from his max point to the point you selected, hurts us very much and all you can say is move from the center of the triangle to your points, hurts you very much. Now O'Malley chose apparently not to profit maximize so there is no point in continuing from my point of view of discussing it because there is no argument I can make to him to say, you know "okay," there is nothing I can offer him. I mean if he won't take his max, what else can I do? He has chosen that she and I get less out of this and you two will get more, fine, if that's the way he has chosen -- if that is what he decides to do ...
3. The best he can do is look at the points and make a guess about optimization.
2. Well, the best he can do ...
1. O'Malley has two choices and once he makes his two choices, he should go after them, we should talk about points.
2. I mean if O'Malley has decided not to go with his max but to go with the lesser, then fine, he should say that and we should finish this right here because I have to leave. I've just got to leave!
4. If he wants to take his max, then he and I are going to go with him, why should he go with you?
2. Right. And so let's decide right now. I move that we go with O'Malley's maximum point, that's the motion on the floor and it's got to go with the majority vote. If you say no, then fine, that will be the end of it, but the motion as it goes with your maximum

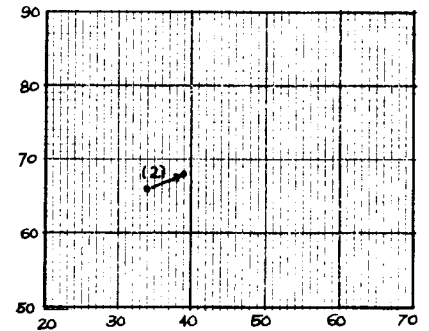
- point, if you don't want the maximum point, then your vote will be decisive.
1. Obviously Charlie and I are not going to support that, so it's ...
  3. We don't have to support it. He can win right there so it's up to him.
  5. Wow!
  3. You've got to make a guess about what most money we all will get out of it.
  5. I would bet that if I ... remember when we had to take all those psych experiments as a prerequisite for a grade in class? It reminds me of that ... you were always getting pimped in the end ... yeah ... I've got a question, if I take my center point, if I take the point we've already chosen (34, 66), Jeanine and Bob get anything?
  2. (34, 66)?
  5. Right.
  2. Well, for me to get nothing you have to go to, to give you an idea, point (125, 28) that's zero.
  - N. You shouldn't say anything like that.
  2. I shouldn't say that when I get zero?
  - N. No.
  2. Oh, I am sorry about that, but moving in, I mean it's a difference between that and very very small compensation, granted I will get something. It is impossible to get zero.
  4. I am in the same position.
  2. Just, you know, it is virtually zero. What the increments you were talking about is very different.
  1. O'Malley, the choices are two small and you large, are you in with three of us?
  3. I think we'll get three large here, and you get one large and two small there.
  1. Yeah, it's one large and two small.
  5. What happens when you get out to my point with you two guys, are you wiped out?
  3. Well, we're wiped out much more than they're gaining.
  2. You don't know that!

3. No, I don't.
2. I mean, you people are still going to get something, you can't tell me that you are getting zero with O'Malley's maximum point.
5. What has occurred is ... If I even go to where he says ... If I go to the point where we have already, you know (34, 66), I have been already substantially depressed and ...
1. (34, 66)?
5. It seems as I understand from the conversation is that, if we go to that point and that they are effectively wiped out, and yet if we come back to my profit maximizing point, you two guys are still in the ball game and they are back in the ball game.
2. We'll all get something.
1. Yeah, but, I mean, what does the ball game mean? Relative to the point we worked out, I've taken a substantial beating by moving five to the right and four up to your optimal point. I've taken a substantial beating.
2. Okay O'Malley, that's a good issue now.
5. My point is that everybody gets something, not only that and given the fact we're not supposed to divvy it up afterwards, you know, it would be nice for everyone to walk out of here with something and I really wonder whether or not this game is designed to show if we went to the point where it was best for me, that would be best for everybody, sort of like Adam Smith, the invisible hand leading everybody to the common good, but ... ah.
2. So, my motion is on the floor.
5. Would you guys be really adverse? Because we don't know the gradation we are dropping off, we don't even know what the gross sums are.
1. That's right, but ... I've taken a substantial beating by moving, I mean really a beating to move to that point.
2. And I think we all are, as you say. We are all going to take a beating to go to your point to a degree but we will all come out with something, and it will not be, you know, all I guess on one value frame how much it is worth, but it is something. Whereas to go to the point between the three of you as you suggest, two of us will get for all intents and purposes, nothing.
5. What do you think?

1. I think it comes down to you deciding whether you want to maximize...
5. I don't think we can use that term. His argument was very persuasive. We don't know because we, I think, we have established at least preliminary that the gradations drop off differently for everyone else.
2. True. When we say maximizing that's an incorrect term to use because we don't know how much each person will have.
1. O'Malley, we do know that at your highest point ...
5. And we do know that at my point that everybody gets something.
1. Well, that's all you can say about that. I'm telling you, Charlie is telling you that your point, at your point relative to where we were before we've taken just a real beating, and we can't put it more quantitatively than that because that's based on my starting point.
3. I think that from the discussion, I am ...
1. It's like four up, one down or three ...
3. If we want to get the largest ...
5. We can talk about that, Charlie ...
3. I know.
5. Bob is right because we don't know, obviously, it is obvious to me at any rate that the monetary gradations are not similar on the various maps and ...
3. He is even talking about, he is way out 165 or something on the x axis, and he is quibbling about four points on the x axis over where we are.
2. It does make a very big difference on my chart.
3. I'm saying, I'm sure it does, if you ... you wouldn't be talking about it.
5. You know, between those two I could go either way on that, if I really thought you were gaining the way he is losing, and I just don't know, there is no way for us to figure that out without violating the rules.
1. That's really where the fight is.
3. I would guess that he's gaining more than Bob is losing here because of the distances, and the thing is ...
2. No, I wouldn't even be in the game if my distances ... the amount I can get from my points would compensate you.

3. Would you actually be in the game if we picked his maximum point?
4. See, I am the next ...
2. I mean, I wouldn't even bother ... (Standing up), look, my car is going to be towed away. I have to decide this in the next two or three minutes ... the motion is down, I think we have done all that we can ...
5. I think we should.
1. I disagree.
2. I made the motion. Can we vote on ... I made it a long time ago.
- N. We have to follow the agenda.
1. All right, O'Malley we've got four people who stand to ... Each one of us, by picking your point, each one of us relative to our center points stand to lose substantially by picking your point. By picking the center of the triangle the other point we've picked out, you know that at least two more people are not losing very much relative to their starting point and you picked up a point that's relatively good for you. It comes down to three against two or one against four.
2. Okay look, we've all said what we can at this point. I move to end debate on this issue.
1. Now wait a minute, I still have the floor. [Note the sensitivity to procedure.]
2. He recognized me (reference is to N.), I don't know why. He's the parliamentarian, but really time constraints are on me, supposedly we have to go through these items now which is going to take some time apparently, so can we go right now to Item one.
3. Well, no, it's not gonna take very much time at all, once we decide the coordinates.
1. Let O'Malley think about it, give us an answer, then we'll go through that.
5. Okay well, I think I'm going to pick my point, and it is not out of greed -- I think the game has been decided.
2. Okay, it's decided, take your point. Item 1, you are in the dark red, right?
5. Yeah.
2. What is your point?

5. It's (39, 68).
2. So I move Item 1 that we go with the dark.
5. Approved.
- N. All right, so we'll take a vote now on Item 1 of the agenda, dark versus light. All those in favor of light? All those in favor of dark? [Unanimous pass.] Okay, you want to vote on Item 2? [The agenda theory predicts a "light" vote here. There was, of course a possibility that it would work in spite of all of the discussion. Subsequent experiments have demonstrated that this particular agenda is not strong at this point. The vote tends to be light here, though seldom unanimous, without all of the foregoing discussion.]



Continuation of proposed points and proposing individuals in parenthesis.

1. Yeah.
2. Yes.
- N. No discussion? Okay, so Item 2, we are voting on dark blue, dark green versus dark red. All those for dark blue, dark green?
1. You can still change your mind, O'Malley.
- N. All those for dark red? Everybody votes.
1. It's 4 to 1. I disagreed. [He votes no. Subsequent experiments reveal that this is a more interesting vote. Individuals 1, 3, 4 should have voted "no" by the agenda model, and in other experiments where there is no "prior agreement" on a point before the vote, they do vote "no" here.]
- N. All right now, can we go because there are no more votes to be taken? Item 5, in the dark red area you have two labeled y, so the way will do this is someone make a proposal, and someone make another proposal and will take a vote between those two, and the winner, then you can make another proposal and keep on until we have a winner.
1. Well, can we just have O'Malley pick the coordinates?
- N. He has to say the level, someone has to pick a coordinate.
5. Y 68.

- N. All right, so we have a proposal that level  $y$  be 68. Is there another proposal?
2. Okay, level  $y$ , 0.
- N. All right, we have another level  $y$ , so all those in favor of level  $y$  being 0? All those in favor of level  $y$  be 68? Okay now, the level of  $y$  68, we have to choose the level of  $x$ , dark red area.
2. 40. [Note this is to his advantage over the 39 he had previously suggested. It makes about \$1.00 difference.]
3. Hey, wait a minute, I don't think he said 40, did he? [The one unit is worth \$1.50 to him.]
5. No, I didn't.
1. He said 39.
3. And I'll say 0.
2. I'll say 40 still.
- N. All right, we have a level of  $x$  at 40 and level  $x$  at 39. We have to take a vote between those two.
2. You are better for Jeanine, you are saying 40? You guys are better at 40, aren't you?
1. No.
3. I think we'd better just stick with what we started out with. [About \$1.50 difference.]
- N. All right, all those ...
5. What are we voting on now?
- N. Those who like the level of  $x$  to be 40? Those who like the level of  $x$  be 39?
5. Okay (39, 68).
- N. Somebody want to move to end debate?

[End of Experiment]

- P. Calculate your payoffs and put them ...
5. Yeah, and also calculate the payoff you would have gotten if we had picked the other points. [Notice his concern.]
3. It's what? (39, 68)?

- N. (39, 68).
- P. All right, I'll tell you what ...
3. 39? Wait a minute, let's get these points clear.
5. (39, 68) is your ...
- P. You want to know what will maximize the total? Is that what you are asking?
1. No, no. Can we reveal what we got?
5. (39, 68) is \$9.45 and (32, 65) which is where we thought originally to be a good place, I get paid \$2.78. In the middle of the triangle, like it paid \$2.78, at the center point I get paid \$9.45.
1. Center point of what?
5. My center point.
1. Okay, at the center point of the triangle O'Malley, I get \$19.00. [He is mad.]
5. Do you really?
1. At the point we were talking about on the line, I get \$15.00 and at the point you picked finally I get \$8.00.
3. At the center point I get \$18.00.
5. Center point of the triangle?
3. Yeah, the point we were going to choose, \$18.00, out here I get \$8.00.
5. We have maximized.
1. No, we haven't.
5. I wonder how much they get, it will depend upon how much they get because he hasn't said, you know ...
1. How do you figure these, how do you figure this cutting and interpolate (39, 68), is the point which I got ...?
5. Yeah, it's \$9.45.
1. Hey, Bob, how much do you make?
2. 7 bucks.
5. Do we profit maximize at that point?
- P. Oh, no, profit maximize is way off in upper right somewhere. [(51, 75)] That's because two of them get a lot more money. But, what do you say? Profit maximize is way up to the upper right.



5. What would you have gotten at my ... at the point where we had chosen?
3. This is the center point of the triangle we were talking about, I would have gotten about \$20.00. [Is the exaggeration an attempt to make 5 feel bad?]
- N. No, you were going to get about \$18.00.
1. O'Malley, there is no way, aggregate amount would have been the center of our triangle.
- P. For you three.
5. But for the five of us ...
- P. That was way up to the right.
- ? . Five, put five of us ...
5. No. How much did Bob get from us?
- P. That's up to him to say.

[ End of recording ]

#### REFERENCES

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1. Fiorina, M., and Charles R. Plott. "Committee Decisions Under Majority Rule: An Experimental Study," Social Science Working Paper 101, California Institute of Technology, December 1975.
2. Plott, Charles R., and Michael E. Levine. "On Using the Agenda to Influence Group Decision: Theory, Experiments and Applications," Social Science Working Paper 66, California Institute of Technology, April 1975.
3. Smith, V. "Notes on Some Literature in Experimental Economics," Social Science Working Paper 21, California Institute of Technology.

#### Appendix A

#### INSTRUCTIONS

##### General

You are about to participate in a committee process experiment in which one of numerous competing alternatives will be chosen by majority rule. The purpose of the experiment is to gain insight into certain features of complex political processes. The instructions are simple. If you follow them carefully and make good decisions, you might earn a considerable amount of money. You will be paid in cash.

##### Instructions to Committee Members

The alternatives are represented by points on the blackboard. The committee will adopt as the committee decision one and only one point. Your compensation depends on the particular point chosen by the committee (see attached payoff chart). For example, suppose your payoff chart is that given in Figure 1 and that the committee's final choice of alternative is the point  $(x, y) = (170, 50)$ .

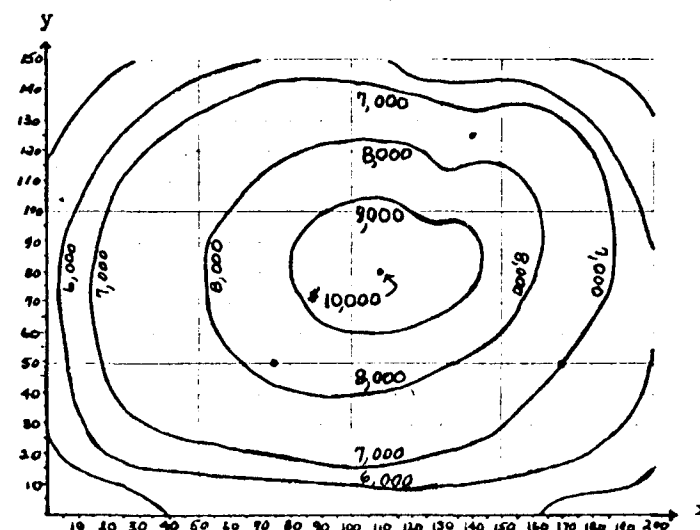


Figure 1

Your compensation in this event would be \$7,000. If the policy of the committee is (140, 125) your compensation would be computed as follows:

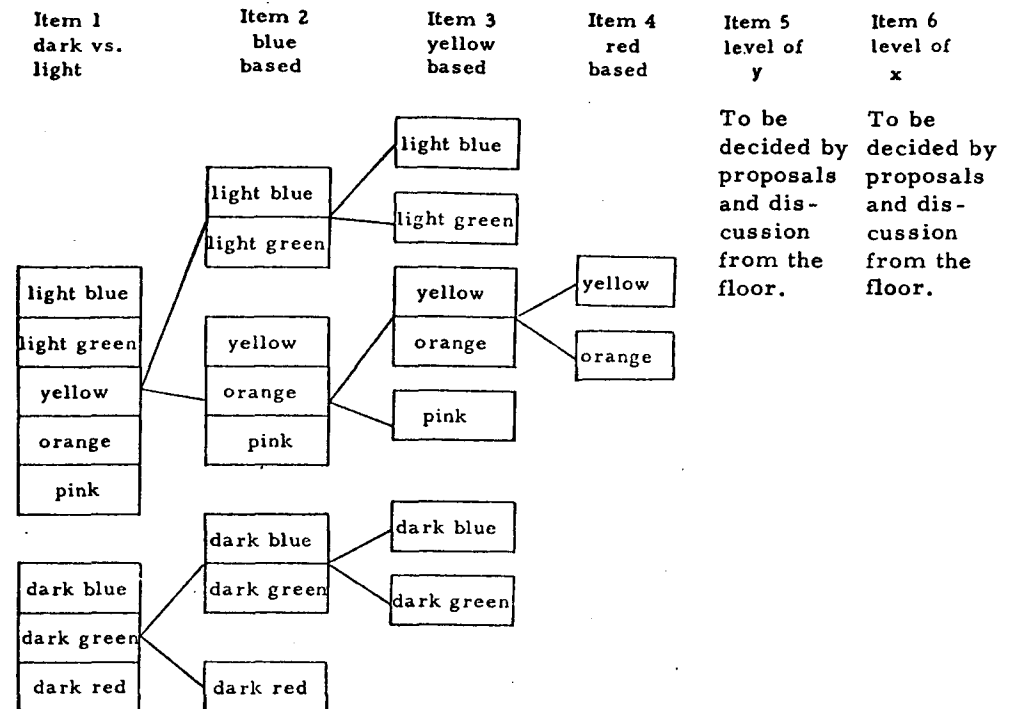
The point (140, 125) is half-way between the curve marked \$7,000 and the curve marked \$8,000. So, your compensation is half-way between \$7,000 and \$8,000, i.e. \$7,500. If the policy is one-quarter of the distance between two curves, then your payoff is determined by the same proportion (i.e. at (75, 50) which is 1/4 of the way between \$8,000 and \$9,000, you get \$8,250).

The compensation charts may differ among individuals. This means that the patterns of preferences differ and the monetary amounts may not be comparable. The point which would result in the highest payoff to you may not result in the highest payoff to someone else. You should decide what decision you want the committee to make and do whatever you wish within the confines of the rules to get things to go your way. The experimenters, however, are not primarily concerned with whether or how you participate so long as you stay within the confines of the rules. Under no circumstances may you mention anything quantitative about your compensation. You are free, if you wish, to indicate which ones you like best, etc., but you cannot mention anything about the actual monetary amounts. Under no circumstances may you mention anything about activities which might involve you and other committee members after the experiment (i.e. no deals to split up afterward or no physical threats).

#### Parliamentary Rules

The basic procedure will be simple majority rule. Given that there are 30,000 integer points to choose among, we have provided an agenda for you to follow. This agenda is outlined on page 3 and should be studied carefully. It will also be covered by the chairman.

#### AGENDA



Item 1. Do we want to consider further only the light colored areas or only the dark colored areas?

\_\_\_\_\_ I am in favor of considering further only the dark colored areas.

\_\_\_\_\_ I am in favor of considering further only the light colored areas.

Item 2. Do we want to consider further only the areas with a blue based color (blue and green) or only those areas without a blue based color (yellow, orange, pink, red)?

\_\_\_\_\_ I am in favor of considering further only those areas with a blue based color.

\_\_\_\_\_ I am in favor of considering further only those areas without a blue based color.

- Item 3. Do we want to consider further only those areas with a yellow based color (yellow, orange, green) or only those areas without a yellow based color (blue, pink)?
- \_\_\_\_\_ I am in favor of considering further only those areas with a yellow based color.
- \_\_\_\_\_ I am in favor of considering further only those areas without a yellow based color.
- Item 4. Do we want to consider further only those areas with a red based color (orange) or only those areas without a red based color (yellow)?
- \_\_\_\_\_ I am in favor of considering further only orange.
- \_\_\_\_\_ I am in favor of considering further only yellow.
- Item 5. Within the remaining area what shall be the level of y? (Proposals and amendments on the exact level should come from the floor.)
- Item 6. Within the remaining area what shall be the level of x? (Proposals and amendments on the exact level should come from the floor.)

Are there any questions?

We would like you to answer the questions on the attached pages. These should help you understand the instructions.

### Question Section of Individual Instructions

- At \_\_\_\_\_ I would make the most possible money. The amount I would receive is \_\_\_\_\_.
- At \_\_\_\_\_ I would make the least possible money. The amount I would receive is \_\_\_\_\_.
- Suppose the top box at Item 1, the one that contains the light colors, received a majority of the votes. Then, the next item to be considered on the agenda is \_\_\_\_\_ and it consists of a vote between the color(s) \_\_\_\_\_ and the color(s) \_\_\_\_\_.
- If the dark colors receive a majority of votes at Item 1, would there be a vote at Item 4? Answer Yes or No \_\_\_\_\_. If the light colors receive a majority vote at Item 1, could the point (100, 100) ultimately be chosen? Answer Yes or No \_\_\_\_\_.
- Fill in the blanks.

Ultimate choice	Majority Choice at Item Number				My compensation
	1	2	3	4	
(120, 20)					
(20, 120)					
(45, 55)					
(65, 95)					

- If at Item 5 the alternatives have been narrowed to the light blue area then the y which can yield me the highest compensation is \_\_\_\_\_? Dark Blue \_\_\_\_\_?

## PARLIAMENTARY RULES FOR CHAIRMAN

Read the appropriate portions at the appropriate times.

Recognition rule: Raise your hand to be recognized by the chair.

Voting rule: The basic voting rule is simple majority rule. An issue passes if it passes by a majority of those present.

Rule to break ties (read this if necessary): If a tie vote occurs, discussion of the motion is again opened. After debate a second vote is taken. If a tie occurs again, debate is opened again and a vote is taken. If a tie occurs again, the committee moves to consider the next issue. Any ambiguity at the end of the last item can be removed by a motion from the floor.

Rule to end debate: If someone wishes to end the debate on an item, they simply move to end debate. If there is no objection to ending debate, the item is voted upon.

(Read if necessary)

If there is objection to ending debate, the motion to end debate will be recognized by the chair. A vote on the motion to end debate will be taken. If it passes by majority of those voting, the debate ends. If the motion to end debate fails, debate on the main motion continues.

Agenda Example (review if necessary):

The agenda committee has adopted the agenda which is before you. Notice that each item on the agenda is designed to restrict the number of programs which may receive further consideration.

Example: Choice of a banquet

Alternative No.	Type of Food	Dress
1	Mexican	Formal
2	Mexican	Informal
3	French	Formal
4	French	Informal

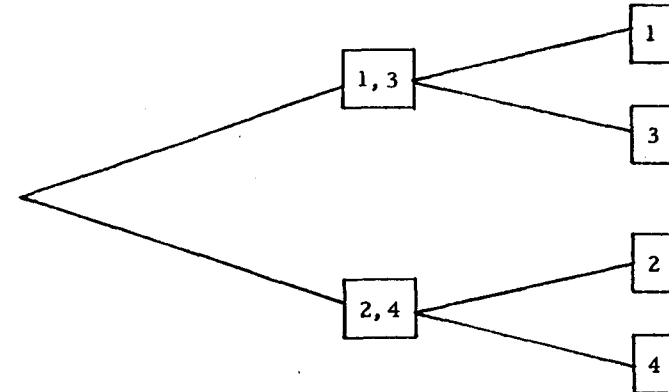
Item 1: Shall we have a formal dress banquet or not? Notice that an answer to this question will restrict further deliberation to either

1, 3

or

2, 4

Item 2. What type of food? Notice that an answer to this question is now all that we need to decide upon a specific alternative.



### Actual Agenda:

There are six items on the agenda. Be sure to record your vote in the appropriate blank at the time of voting.

Item 1. Shall the choice be in a dark colored area or a light colored area?

Item 2. Shall the choice be in a blue based area or not?

Item 3. Shall the choice be in a red based area or not?

Item 4. Shall the choice be in a yellow based area or not?

Item 5. Within the chosen color what shall be the level of y?

Item 6. What shall be the level of x?

We shall take up these items in the sequence listed. Discussion will be limited to that germane to the item on the floor. Discussion related to subsequent items will be ruled out of order.

Special notes on Items 5 and 6.

The first suggested number will serve as a motion on the floor. Subsequent proposals will be treated as amendments and each amendment will be voted upon prior to the considerations of subsequent amendments. The floor remains open until there are no more proposed amendments or until a move to end debate is accepted. The motion on the floor, as amended, will then be voted upon.

# APPENDIX B: Sample Indifference Map -- Player 3, Series 1, High Payoff

